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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 10/634,391      | 08/05/2003  | Michael Anthony Burke | 2003P11518US        | 6532             |
| 7590            | 09/26/2005  |                       |                     |                  |
|                 |             |                       | EXAMINER            |                  |
|                 |             |                       | XU, LING X          |                  |
|                 |             | ART UNIT              | PAPER NUMBER        |                  |
|                 |             | 1775                  |                     |                  |

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                        |  |
|------------------------------|------------------------|------------------------|--|
| <b>Office Action Summary</b> | Application No.        | Applicant(s)           |  |
|                              | 10/634,391             | BURKE, MICHAEL ANTHONY |  |
|                              | Examiner<br>Ling X. Xu | Art Unit<br>1775       |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 8/5/2003.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-18 and 20-23 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-4, 11, 13, 16-18, 20, 21 and 23 is/are rejected.  
 7) Claim(s) 5-10, 12, 14, 15 and 22 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 05 August 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/5/2003</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 18 is objected to because of the following:

There are two claims 18 in the present application. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 20 and 21-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 20, it is unclear if the any spheroid is or is not partially deformed to at least partially fill a void. The term “may be” is indefinite. The following examination is based on that the spheroid is partially deformed to at least partially fill a void.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 11, 13 and 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Park et al (US 5,185,297).

With respect to claims 1-4, Park discloses ceramic foams in which the open cells are connected by a three-dimensional ceramic matrix formed of interconnected hollow ligaments (abstract). The ceramic ligaments are substantially hollow and each has a ceramic wall 6 and a metal core 8 (see figs. 2A and 2B). The metal core 8 is partially filled the interior of the ligament (col. 8, lines 15-25).

As shown in Fig. 1-2 and 2A-2B, the ceramic foams comprising a plurality of partially filled shapes disposed in a binding three-dimensional ceramic matrix. The plurality of partially filled shapes comprises a dimensionally stabilized array of shapes. The shape shown in Figs. 2A-2B is considered to be shapes free of corners. Each partially filled shape comprises an inner skeleton 8 and an outer skin 6, see Figs. 2B.

With respect to claims 11 and 13, Park discloses that the outer skin 6 is made of ceramic and inner skeleton is make of metal, which is distinct from the ceramic material and stabilized at a higher temperature relative to the ceramic material.

With respect to claims 16-17, Park discloses that the outer skin 6 comprising the binding matrix of three-dimensional ceramic (abstract) and the outer skin comprises an encapsulation of the inner skeleton and thus provides environmental and /or chemical protection to the inner skeleton.

***Claim Rejections - 35 USC § 103***

4. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park as applied to claims 1 and 4 above, and further in view of the same reference.

As stated above, Park discloses the same ceramic structure as recited in claims 1 and 4.

Park does not discloses the inner skeleton fill material volume is in the range as recited in claim 18.

However, differences in amount range of the fill material present in the structure will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such amount is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955).

Therefore, it would have been obvious to one of ordinary skill in the art to use the amount of the fill material as claimed by routine experimentation absent of evidence showing that the amount of the fill material as claimed is critical.

*Allowable Subject Matter*

5. Claims 5-10, 12, 14-15 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 21 and 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling X. Xu whose telephone number is 571-272-1546. The examiner can normally be reached on 8:00 - 4:30 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah D. Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ling X. Xu  
Examiner  
Art Unit 1775